

## **PLANETARY GEAR ELECTRO-MAGNETIC CLUTCH**

### **ABSTRACT**

**[0041]** The present invention is an electro-magnetic clutch apparatus that includes a plurality of planetary gears. The plurality of gears is configured so that the plurality of gears engages with and revolves around the a first rotatable body when the first rotatable body is rotating. A second rotatable body provides support for the plurality of gears around the first rotatable body. The first rotatable body and the second rotatable body are configured so that when an electro-magnetic force supplied by an electro-magnetic force generating means is applied or removed, the internal gear is fixed or free to rotate. The first rotatable body and the second rotatable body couple when the internal gear is fixed causing torque to be transmitted from the first rotatable body to the second rotatable body. When the internal gear is freely rotatable or not fixed, the first rotatable body and the second rotatable body are decoupled and torque is not transmitted from the first rotatable body to the second rotatable body.